

US EPA ARCHIVE DOCUMENT

**Technical Support Document for Cass County, Michigan
September 2004**

Chapter

1.0 Summary

On July 15, 2004 Steven Chester, Michigan Department of Environmental Quality (MDEQ) Director and Governor's designee, submitted a request to reclassify Cass County from Moderate ozone nonattainment to Marginal ozone nonattainment. A subsequent submittal supplying additional information was made on August 20, 2004. The petition is based on the area's Moderate design value of 93 ppb being within 5% of the maximum Marginal design value of 91 ppb as allowed by the Clean Air Act.

EPA has reviewed this request and believes the area should be reclassified as Marginal ozone nonattainment.

2.0 Introduction

This section describes the statutory provisions and EPA guidance regarding reclassification of ozone nonattainment areas. Sections 181(a)(4) and 182(b)(3) of the Clean Air Act provide that areas may be reclassified under certain circumstances. This technical support document addresses the provisions of section 181(a)(4) and a specific request for reclassifications received by the State of Michigan. The EPA has not received any requests for reclassification under section 182(b)(3) for the 8-hour ozone standard.¹

Under section 181(a)(4), an ozone nonattainment area may be reclassified "if an area classified under paragraph (1) (Table 1) would have been classified in another category if the design value in the area were 5 percent greater or 5 percent less than the level on which such classification was based." In the April 30, 2004 notice, we indicated that an area with a moderate design value of 96 ppb (or less) would be eligible to request a bump down because five percent less than 96 ppb is 91 ppb, a marginal design value.

The EPA previously described criteria to implement the section 181(a)(4) provisions in a final rule designating and classifying areas published on November 6, 1991 (56 FR 56698). As stated in that notice, the provisions of section 181(a)(4) set out general

¹Section 182(b)(3) specifies that EPA would approve any request from a State to reclassify to a higher classification.

criteria and grant the Administrator broad discretion in making or determining not to make, a reclassification. As part of the 1991 action, EPA developed more specific criteria to evaluate whether it is appropriate to reclassify a particular area. The EPA also described these criteria in the April 30, 2004 final rule. The general and specific criteria are as follows:

General: The EPA may consider the number of exceedances of the national primary ambient air quality standard for ozone in the area, the level of pollution transport between the area and other affected areas, including both intrastate and interstate transport, and the mix of sources and air pollutants in the area.

Request by State: The EPA does not intend to exercise its authority to bump down areas on EPA's own initiative. Rather, EPA intends to rely on the State to submit a request for a bump down. A Tribe may also submit such a request and, in the case of a multi-state nonattainment area, all affected States must submit the reclassification request.

Discontinuity: A five percent reclassification must not result in an illogical or excessive discontinuity relative to surrounding areas. In particular, in light of the area-wide nature of ozone formation, a reclassification should not create a "donut hole" where an area of one classification is surrounded by areas of higher classification.

Attainment: Evidence should be available that the proposed area would be able to attain by the earlier date specified by the lower classification in the case of a bump down.

Emissions reductions: Evidence should be available that the area would be very likely to achieve the appropriate total percent emission reduction necessary in order to attain in the shorter time period for a bump down.

Trends: Near- and long-term trends in emissions and air quality should support a reclassification. Historical air quality data should indicate substantial air quality improvement for a bump down. Growth projections and emission trends should support a bump down. In addition, we will consider whether vehicle miles traveled and other indicators of emissions are increasing at higher than normal rates.

Years of data: For the 8-hour ozone standard, the 2001-2003

period is central to determining classification. Data from 2004 may be used to corroborate a bump down request but should not be the sole foundation for the bump down request.

Limitations on Bump Downs

An area may only be reclassified to the next lower classification. An area cannot present data from other years as justification to be reclassified to an even lower classification. In addition, section 181(a)(4) does not permit moving areas from subpart 2 into subpart 1.

In 1991, EPA approved reclassifications when the area met the first requirement (a request by the State to EPA) and at least some of the other criteria and did not violate any of the criteria (emissions, reductions, trends, etc.). In our April 30, 2004 final rule on designations and classifications, we stated our intention to use this method and these criteria once again to evaluate reclassification requests under section 181(a)(4), with minor changes described in that notice. In that notice we also described how we applied these criteria in 1991. For additional information, see section 5, "Areas requesting a 5% downshift per §181(a)(4) and EPA's response to those requests," of the Technical Support Document, October 1991, for the 1991 rule. [Docket A-90-42A.]

EPA is not basing this reclassification determination on consideration of whether the nonattainment area being reclassified does or does not cause any pollution transport. The EPA is presently addressing ozone pollution transport issues throughout the eastern part of the United States under other Clean Air Act provisions. Specifically, EPA has proposed a determination that emissions from certain states contribute significantly to downwind nonattainment for ozone under CAA section 110(a)(2)(D) through the Clean Air Interstate Rule (CAIR). The CAIR proposal, published in a Federal Register notice dated January 30, 2004, would require upwind States to eliminate emissions that contribute significantly to nonattainment in downwind States. 69 Fed. Reg. 454566. The EPA previously issued the NOx SIP call (63 FR 57356) to address interstate ozone transport. In the event of any intrastate transport issue, states have the obligation to develop attainment SIPs for each area that show timely attainment, and can address any intrastate transport issues in that context.

The April 30, 2004 notice invited States to submit the reclassification requests within 30 days of the effective date of the designations and classifications. The effective date was June 15 which means that reclassification requests were to be

submitted by July 15, 2004. This relatively short time frame is necessary because section 181(a)(4) only authorizes the Administrator to make such reclassifications within 90 days after the initial classification, September 15, 2004.

3.0 Background

Cass County is highly impacted by transport due to the Lake Michigan ozone phenomenon. Cass County has low population and no major sources. EPA designated this area as Moderate due to high 8-hour values (design value is 93 ppb) and 1-hour values (122 ppb).

4.0 Reclassification Request by State

The State argues that Cass County should receive a reclassification from Moderate to Marginal. The demonstration is based on modeling showing earlier attainment (2007), identification of the ozone transport problem in the area, and a demonstration of less than one percent of contribution from local sources.

5.0 EPA Review of the Reclassification Request

5.1 Request by State

The request was submitted by Steven Chester, Director of Michigan Department of Environmental Quality. The MDEQ Director is the Governor's designee.

5.2 Discontinuity

If Cass County is reclassified from Moderate to Marginal, this will not result in a discontinuity. All of the counties immediately bordering Cass County are either designated as attainment or are Subpart 1 nonattainment.

5.3 Attainment

The Lake Michigan Air Directors Consortium (LADCo) used modeling results performed to support the 1-hour ozone attainment demonstration for the Lake Michigan area and applied 8-hour ozone metrics. This modeling conducted by LADCo indicates that Cass County will be in attainment (81 ppb) in 2007. However, as noted in Michigan's petition, the LADCO subregional modeling was completed in 2001 and designed to assess 1-hour ozone and, as such, there are some limitations with using it to assess 8-hour ozone. On the other hand, it should be noted that three of the

four modeled episodes are representative periods for high 8-hour ozone and basecase model performance for 8-hour ozone was found to be as good as (or better than) that for 1-hour ozone (page 7 of the IDEM & LADCo July 2004 "Photochemical Modeling Analysis of 8-Hour Ozone for LaPorte County"). Since this modeling was performed before the Heavy Duty Engine rule was proposed, it does not reflect emission reductions from that national program.² Use of a more recent emission inventory and base design value would likely result in lower predicted concentrations.

Additional, regional scale, modeling from the January 2004 proposed Clean Air Interstate Rule however, indicates that the area will be in attainment (83 ppb) by 2010. The CAIR modeling, however, was not designed to provide results for years prior to 2010.

5.4 Emissions Reductions

Because this area is so heavily impacted by transported pollution from upwind areas, it would be difficult to show that reductions from the area will help to achieve the area's earlier attainment date. It can be expected that ozone values will continue to decrease due to the implementation of various rules such as the NOx SIP Call, Tier II/Low Sulfur, Heavy Duty Diesel Engine standards/low sulfur diesel, and other national rules. In addition, implementation of emission reductions contained in 1-hour ozone attainment plans in the Lake Michigan area will further reduce emissions.

Other voluntary measures being implemented in the Lake Michigan area include:

- Schoolbus, nonroad vehicle and garbage truck diesel retrofit programs
- Alternative fuel fleets
- Gas can replacement programs
- Lawnmower buyback programs
- Educational outreach programs and ozone action days

5.5 Trends

²Engine manufacturers will have flexibility to meet the new standards through a phase-in approach between 2007 and 2010. The fuel provision will go into effect in June 2006 and will be phased-in through 2009.

The 4th highest values for ozone from 2002, 2003 and 2004³ show a decreasing trend at 103 ppb, 89 ppb and 74 ppb, respectively. Further, it can be expected that ozone values will continue at these lower levels due to the implementation of various rules such as the NOx SIP Call, Tier II/Low Sulfur, Heavy Duty Diesel Engine standards/low sulfur diesel, and other national rules. In addition, implementation of emission reductions contained in 1-hour ozone attainment plans in the Lake Michigan area will further reduce emissions and improve air quality.

5.6 Years of Data

The design value being used a 2001-2003 value and it is 93 ppb.

5.7 Additional Information

The CAMx (version 4.03), with the OSAT technology, was used in this analysis to determine the geographic source (i.e., Chicago) contribution of ozone precursors and source emissions type (i.e., on-road mobile) contribution at specific locations such as the Cassopolis monitor. Based on that analysis, less than one percent of the ozone recorded at the Cassopolis monitor can be attributed to local (i.e., Cass Co. plus St. Joseph Co.) emissions.

5.8 Conclusions

In summary, the following factors support the request for reclassification to marginal for Cass County: the design value of 93 ppb meets our criteria to qualify for consideration of bump down, local and regional modeling analyses indicate air quality will be improving over the next several years and support attainment by the marginal area attainment date, a short term trends analysis shows ozone values decreasing, and additional reductions from regional and national regulations will continue this trend in lowering ambient ozone values.

5.9 EPA Action

The reclassification request for Cass County meets all of the criteria (request, discontinuity, attainment, emission reductions, trends, and data) EPA established (69 FR 23863). Therefore, EPA is approving the reclassification request for Cass County.

³The ozone values for the 2004 ozone season through September 1 and are preliminary.

6.0 Additional Information

Additional information regarding the bump down request for this area is contained in the docket for this action. This information includes the State request, supporting documents, and other necessary material.